

DTC P1140: RIGHT BANK, OR DTC P1145: LEFT BANK INTAKE VALVE TIMING CONTROL POSITION SENSOR

NOTE: Before performing diagnostic procedure, follow testing procedure. See **TESTING PROCEDURE** under **SELF-DIAGNOSTIC SYSTEM**.

DTC Confirmation Test

Malfunction is detected when an excessively high or low voltage is sent to ECM from Intake Valve Timing Control (IVTC) position sensor. Possible causes are:

- IVTC position sensor circuit open or shorted.
- Faulty IVTC position sensor.
- Faulty Crankshaft Position (CKP) sensor (REF).
- Faulty CKP sensor (POS).
- Faulty Camshaft Position (CMP) sensor.

To set DTC, turn ignition on and select DATA MONITOR with scan tool. Slightly increase engine speed and hold for at least 10 seconds. If first trip DTC is detected, go to **PROCEDURE** .

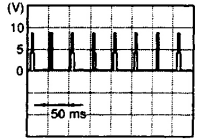
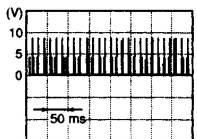
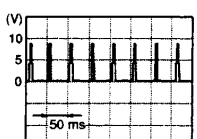
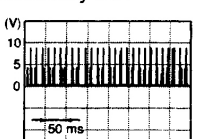
Reference Values

For ECM Terminals and Reference Values, see **Fig. 39** .

Specification data are reference values, and are measured between each terminal and ground.

CAUTION:

Do not use ECM ground terminals when measuring input/output voltage. Doing so may result in damage to the ECM's transistor. Use a ground other than the ECM terminals, such as the ground.

TERMI- NAL NO.	WIRE COLOR	ITEM	CONDITION	DATA (DC Voltage)
79	Y/G	Intake valve timing control position sensors (RH)	[Engine is running] ● Warm-up condition ● Idle speed	Approximately 0.5V 
			[Engine is running] ● Warm-up condition ● Engine speed is 2,000 rpm.	Approximately 0.5V 
89	OR	Intake valve timing control position sensors (LH)	[Engine is running] ● Warm-up condition ● Idle speed	Approximately 0.5V 
			[Engine is running] ● Warm-up condition ● Engine speed is 2,000 rpm.	Approximately 0.5V 

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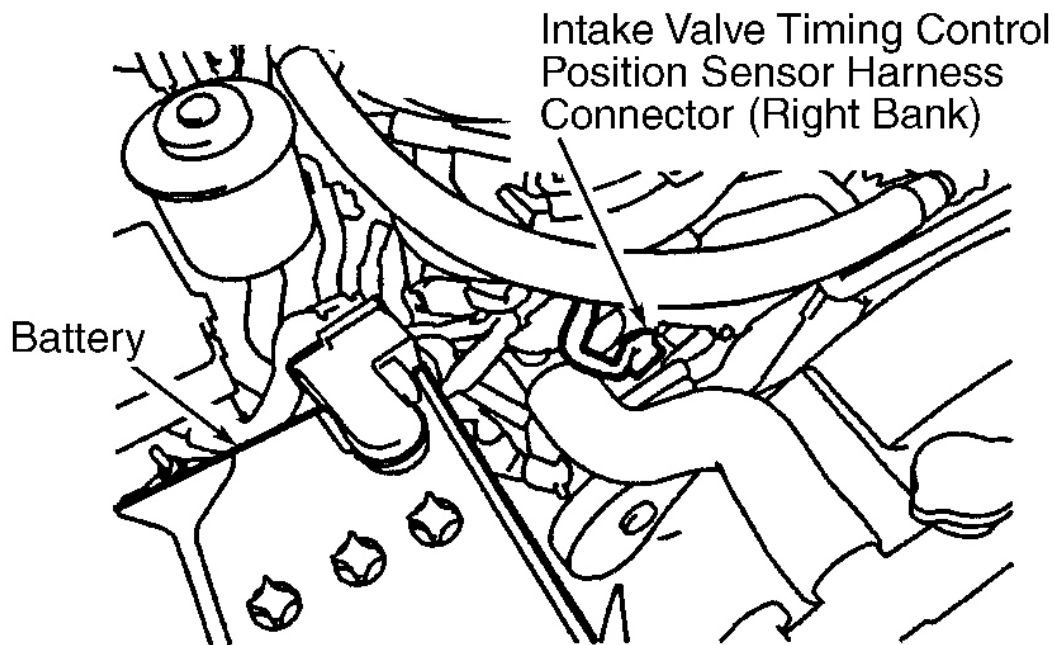
Fig. 39: ECM Terminals & Reference Value

Procedure

1. Turn ignition off. Loosen and retighten engine ground bolts. See **Fig. 5** . Disconnect appropriate IVTC position sensor harness connector. See **Fig. 40** or **Fig. 41** . Turn ignition on. Measure voltage between ground and IVTC position sensor harness connector terminal No. 3 (Black/White wire). If battery voltage exists, go to next step. If battery voltage does not exist, repair open or short circuit and retest system. See WIRING DIAGRAMS article.
2. Turn ignition off. Check continuity between engine ground and IVTC position sensor harness connector terminal No. 1 (Black wire). Also check circuit for short to voltage. Repair circuit as necessary and retest system. If ground circuit is okay, go to next step.
3. Disconnect ECM harness connector. See **Fig. 3** . Check continuity of Yellow/Green wire between right IVTC position sensor harness connector terminal No. 2 and ECM harness connector terminal No. 79, or

Orange wire between left IVTC position sensor harness connector terminal No. 2 and ECM harness connector terminal No. 89. See **Fig. 4** . Also check circuit for short to ground and short to voltage. Repair circuit as necessary and retest system. If circuit is okay, go to next step.

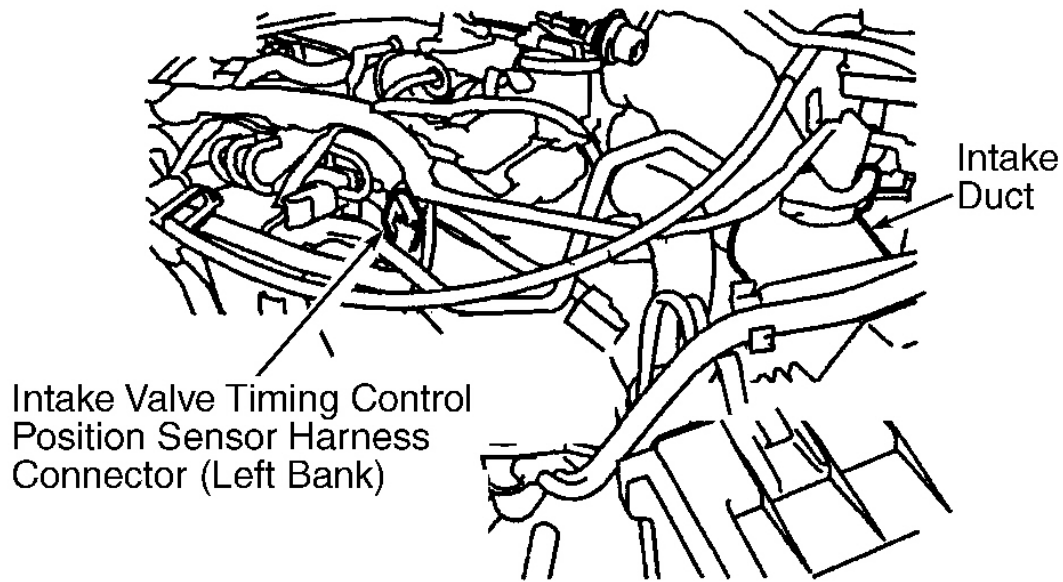
4. Ensure IVTC position sensor is installed correctly. Loosen and retighten IVTC position sensor mounting bolt. Reconnect all harness connectors. Perform **DTC CONFIRMATION TEST** . If first trip DTC is detected, go to next step. If first trip DTC is not detected, test is complete.
5. Remove IVTC position sensor, and inspect for chipping. Replace sensor, if chipped. If sensor is not chipped, measure resistance of IVTC position sensor as shown in illustration. See **Fig. 42** . If resistance is as specified, go to next step. If resistance is not as specified, replace IVTC position sensor and retest system.
6. Check for accumulation of debris on signal pick-up area of camshaft. Remove debris and clean camshaft as necessary and retest system. If no accumulation of debris is present, no problem is indicated at this time. Problem may be intermittent. See INTERMITTENTS in TROUBLE SHOOTING - NO CODES article.



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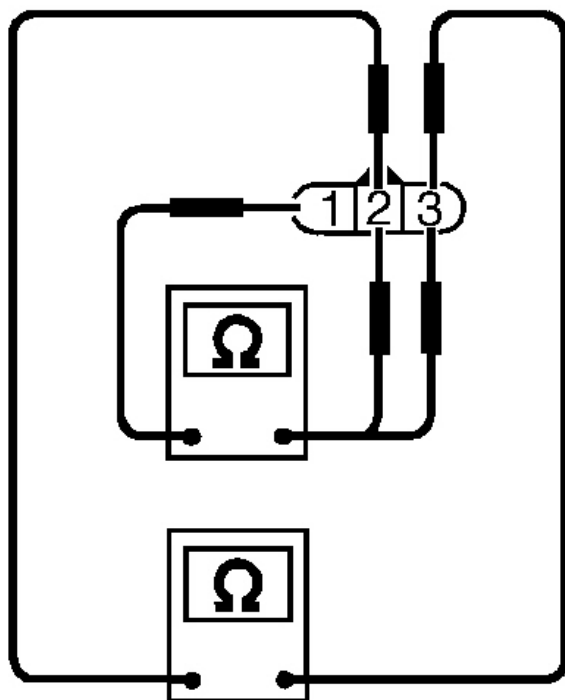
Fig. 40: Locating IVTC Position Sensor Harness Connector (Right Bank)

Courtesy of NISSAN MOTOR CO., U.S.A.



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Fig. 41: Locating IVTC Position Sensor Harness Connector (Left Bank)
Courtesy of NISSAN MOTOR CO., U.S.A.



Resistance Ω [at 25°C (77°F)]	Terminal No. (Polarity)
Except 0 or ∞	3 (+) - 1 (-)
	2 (+) - 1 (-)
	3 (+) - 2 (-)

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Fig. 42: Testing IVTC Position Sensor
 Courtesy of NISSAN MOTOR CO., U.S.A.